What is claimed is:

1. A method of securing components of a vehicular driveshaft assembly comprising:

providing a driveshaft tube having an open end;

providing an end fitting having a neck;

disposing the neck of the end fitting into the open end of the driveshaft tube so that an annular gap is provided between the neck and the driveshaft tube;

providing an inductor around the driveshaft tube adjacent the end receiving the neck; and

energizing the inductor to generate a magnetic field for collapsing the driveshaft tube about the neck at a velocity sufficient to magnetic pulse weld the driveshaft tube and end fitting to each other.

2. The method of Claim 1 wherein the annular gap is substantially uniform, and spans a radial distance within the range of from about 0.5 to about 5 mm.

3. The method of Claim 1 wherein the driveshaft tube and end fitting are formed from the same material.

4. The method of Claim 3 wherein the material is an aluminum alloy.

5. The method of Claim 1 including charging high voltage capacitors with a power source using a charging circuit, and discharging the capacitors using a discharge circuit for the step of energizing the inductor, where the charging circuit is closed and the discharge circuit is open during the charging of the capacitors, and the charging circuit is open and the discharge circuit is closed during the discharging of the capacitors.

6. The method of claim 1 in which the inductor is energized with a current greater than 750,000 amps.

7. A method of joining an end fitting and a driveshaft tube of a vehicular driveshaft assembly comprising:

providing a hollow driveshaft tube having an open first end, the driveshaft tube having an inner surface defined by a first inner diameter;

providing a tubular sleeve having an outer surface defined by a second diameter smaller than the first diameter and an inner surface defined by a third diameter smaller than the second diameter;

providing an end fitting having a neck with an outer surface defined by a fourth diameter smaller than the third diameter;

providing an electrical inductor;

disposing the neck of the end fitting into the tubular sleeve so that a first annular gap is formed between the neck and the tubular sleeve;

disposing the sleeve into the open end of the driveshaft tube so that a second annular gap is formed between the tubular sleeve and the driveshaft tube;

disposing the first end of the driveshaft tube containing the sleeve and neck into the inductor; and

energizing the inductor to generate electromagnetic forces to collapse the driveshaft tube onto the tubular sleeve and the tubular sleeve onto the neck at a high velocity, thereby welding the driveshaft tube is to the sleeve and the tubular sleeve to the neck.

8. The method of Claim 7 wherein the first and second annular gaps are substantially uniform, and span a radial distance within the range of from about 0.5 to about 5 mm.

9. The method of claim 7 in which the inductor is energized with a current greater than 750,000 amps.

10. A method of joining an end fitting and a driveshaft tube of a driveshaft assembly comprising:

welding with magnetic pulse welding a generally tubular sleeve of transition material to the outer surface of a neck of an end fitting;

reducing the thickness of the transition material; and

welding a hollow driveshaft tube to the transition material using magnetic pulse welding to join the driveshaft tube to the end fitting.

11. The method of claim 10 in which the thickness of the transition material is reduced by turning the transition material.

12. The method of claim 10 the thickness of the transition material is reduced to a thickness within the range of from about 0.3 to about 1.0 mm.

13. An end fitting suitable for being joined to a driveshaft tube of a driveshaft assembly by means of electromagnetic pulse welding, where the welding process generates contaminants traveling along the end fitting, where the end fitting comprises:

a welding surface suitable for being welded to the driveshaft tube by magnetic pulse welding; and

a pocket for providing a collection location for the contaminants.

14. The end fitting of claim 13 in which the pocket is in welding surface.

15. The end fitting of claim 13 in which the end fitting has a shoulder, and pocket is positioned in the shoulder.

16. The end fitting of claim 13 in which the welding surface of the welding surface is frustoconical, at an angle to the driveshaft tube, so that the welding process causes the driveshaft tube to contact the welding surface first at an initial contact portion of the welding surface, then progressively along an intermediate portion of the welding surface, and finally at an end portion of the welding surface, and where the pocket is positioned near the end portion of the welding surface to collect the contaminants.

17. An end fitting suitable for being joined to a driveshaft tube of a driveshaft assembly by means of electromagnetic pulse welding, where the end fitting comprises:

a neck positioned on the end fitting, the neck having a welding surface suitable for being joined to the driveshaft tube by welding; and

a slot positioned in the neck of the end fitting to provide increased flexibility to the neck of the end fitting during the welding process.

18. The end fitting of claim 17 in which the slot has an orientation generally normal to the welding surface.

19. A method of securing components of a driveshaft assembly comprising:

providing a driveshaft tube having an open end;

providing an end fitting having a neck, where the neck has a frustoconical surface and a shoulder, thereby defining a cavity;

disposing the neck of the end fitting into the open end of the driveshaft tube so that an annular gap is provided between the neck and the driveshaft tube, with the end of the driveshaft tube being generally axially aligned with the shoulder;

providing a shield to block the emission of contaminants escaping from the cavity along the shoulder; and

welding the driveshaft tube to the end fitting.

20. The method of claim 19 where the shield is a film.

21. The method of claim 19 where the shield is polyethylene.

22. A method of securing components of a driveshaft assembly using magnetic pulse welding apparatus including an inductor coil for magnetic pulse welding a driveshaft to an end fitting, a capacitor for storing energy, a discharge switch for discharging the stored energy in the capacitor to the inductor coil to weld the driveshaft to the end fitting, and a charging circuit for charging the capacitor, where the discharge switch is capable of self breakdown, the method comprising:

progressively evacuating the gases surrounding the discharge switch, where the evacuation progressively increases the voltage at which the discharge switch will self breakdown;

charging the capacitor at a rate which maintains the voltage of the capacitor at a level below the self breakdown voltage of the discharge switch; and

discharging the capacitor through the discharge switch after the voltage reaches a predetermined voltage.

23. The method of claim 22 where the step of charging the capacitor is begun after time lag from the initiation of the step of progressive evacuating the gases surrounding the discharge switch.

24. The method of claim 23 where the time lag is within the range of from about 0.5 to about 3 seconds.

25. The method of claim 22 where predetermined voltage is greater than 2,500 volts.

26. The method of claim 22 where the difference in voltage between the self breakdown voltage of the discharge switch and the voltage of the capacitor is maintained at a level of at least 200 volts during the charging of the capacitor.

27. A method of securing components of a driveshaft assembly using magnetic pulse welding apparatus including an inductor coil for magnetic pulse welding a driveshaft to an end fitting, a capacitor for storing energy, a discharge switch for discharging the stored energy in the capacitor to the inductor coil to weld the driveshaft to the end fitting, and a charging circuit for charging the capacitor, where the discharge switch is capable of self breakdown, the method comprising:

assembling the driveshaft and end fitting in preparation for welding them together;

charging the capacitor to a voltage equal to a predetermined threshold level;

inserting the assembled driveshaft and end fitting into the inductor coil after the voltage of the capacitor has reached the predetermined level; and

welding the assembled driveshaft and end fitting into a driveshaft assembly.

28. The method of claim 27 where the welding step is carried out within 2 seconds after insertion of assembled driveshaft and end fitting into the inductor coil.

29. The method of claim 28 where the welding step is carried out within 1 second after insertion of assembled driveshaft and end fitting into the inductor coil.

30. The method of claim 27 in which the capacitor is charged at a rate which maintains the voltage of the capacitor at a level below the self breakdown voltage of the discharge switch.